# Specific Heat and Calorimetry (cont)

In another type of calorimetry calculations, a chemical reaction can provide energy to change the temperature of another substance.

**Molar enthalpy** is defined as the amount of energy absorbed (or released) per 1 mol of that substance.

## Practice problems with molar mass

Suppose you need 3.00 mol of sodium chloride (NaCl) for a laboratory experiment. How much mass should be measured?

Aluminum oxide helps prevent corrosion when applied to surfaces. What is the mass of 9.45 mol of aluminum oxide?

# Mole-Mass Worksheet

$\Delta H_x = nH_x$ measures energy associated with bonds/forces holding particles together. 'x' stands for the type of energy being changed. 'n' is the amount of substance undergoing the change.

Some common examples are

$\Delta H_C$ (combustion)    $\Delta H_{vap}$ (vapor)
$\Delta H_{fus}$ (fusion)    $\Delta H_{cond}$ (condensation)

Example 4

How much energy (in kJ) would be released by the burning of 250.0g of propane? ($H_{c(propane)}$ = -2217 kJ/mol)

Example 5

What mass of propane would need to be burned to provide 4.580 x 10$^4$ kJ of energy? [molar enthalpy of combustion of propane is -2217 kJ/mol]

# Specific Heat and Calorimetry

## $\Delta H_x = nH_x$ Problems #2